NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

F A C T S H E E T

(pursuant to NAC 445A.236)

Permittee: SBEHG Las Vegas I, LLC
dba Sahara Hotel and Casino
2535 Las Vegas Boulevard South
Las Vegas, Nevada 89109

Permit: NV0023141 – Renewal

Location: Sahara Hotel and Casino
2535 Las Vegas Boulevard South
Las Vegas, Clark County, Nevada 89109

Latitude: 36° 06' 35" N
Longitude: 115° 10' 20" W

Township 21S, Range 61E, Section 9 MDB&M

Flow: 0.2304 Million gallons per day (MGD) Daily Maximum and 30-day Average
(160 gallons per minute (gpm))

General: The Permittee has applied for a National Pollutant Discharge Elimination System (NPDES) permit to continue to discharge treated groundwater from the Sahara Hotel and Casino dewatering system to the Las Vegas Wash via the Clark County Stormdrain System and the Flamingo Wash. An NPDES Permit for this discharge was first issued in May 2001 to the Gordon Gaming Corporation. Dewatering activities began under temporary discharge permit TNEV2000348. The Permittee acquired the facility August 1, 2007.

The facility is located at 2535 Las Vegas Boulevard South, the intersection of Sahara Avenue and Las Vegas Boulevard South, Las Vegas. The Permittee operates a hotel and casino with associated amenities including a roller coaster. The dewatering activities are associated with the roller coaster, which has numerous components stationed below grade; the sump is 25 feet below grade. The Permittee's dewatering activities are believed to have drawn a tetrachloroethylene (PCE) plume from an off-site source to the facility.

The dewatering system consists of a sump located at the lowest portion of the roller coaster area to intercept the shallow groundwater. A drop inlet collects stormwater from the roller coaster pathway and discharges to the sump. The collected water is pumped through a granular activated carbon adsorption system to remove organic compounds. The treatment system consists of two skid-mounted 660-gallon carbon vessels operated in parallel with another pair of vessels on stand-by. Each of the carbon vessels is rated for a maximum flow of 100 gpm. The treated water is then piped to the stormdrain system. A totalizing flow meter is located upgradient of the carbon filters. The sampling port is located downstream of the filters. To restrict access, the treatment system is located behind a locked gate and the sump is covered by a steel plate.

The Operations and Maintenance Manual for this facility was received January 16, 2007 and the response to the Division comments was received February 22, 2007.

The current total phosphorus (TP) and total ammonia Las Vegas Wash total maximum daily loads (TMDL) were established in 1989 and became fully effective in 1994 and 1995, respectively. The October 2003, Evaluation of TMDLs and Associated Water Quality Standards Attainment for the Las Vegas Wash, Las Vegas Bay, and Lake Mead includes TP, 433 lb/day, and total ammonia, 970 lb/day, TMDLs. Waste load allocations (WLA) in the Wash at Northshore Road were established to meet the Las Vegas Bay water quality standards. The WLAs are applicable for only March through October for TP and April through September for total ammonia and were based on target concentrations, 0.64 mg/L – TP, 1.43 mg/L – total ammonia, and average streamflows.

Receiving Water Characteristics: The treated waters are discharged to the Las Vegas Wash via the Clark County Stormdrain System. The Las Vegas Wash from Telephone Line Road to confluence of discharges from City of Las Vegas and Clark County wastewater treatment plants, NAC 445A.199, standards apply for this stream segment via the tributary rule. Per NAC 445A.198, the beneficial uses of this segment of the Wash are: irrigation; watering of livestock; recreation not involving contact with the water; maintenance of a freshwater marsh; propagation of wildlife; and propagation of aquatic life, excluding fish.

The Division does not monitor the Upper Las Vegas Wash water quality. The Bureau of Water Quality Planning database includes 1st quarter 2001 through 1st quarter 2005 water quality data for the Wash above Lake Las Vegas, CL3A. This monitoring point is located downgradient of the discharges from the three Las Vegas area wastewater treatment plants. At this point, the Wash met the NAC 445A.199 requirements to maintain existing higher quality (RMHQ) and the water quality standards for beneficial uses except fecal coliform.

In addition to the two constituents with TMDLs, total ammonia and TP, the 11/05 EPA Approved Final, Nevada 2004 303(d) List includes total iron and selenium as pollutants or stressors of concern. The average Wash concentrations for these four parameters over the same time period have been included in the following table:

Parameter	RMHQ	Standard[3]	Average
Temperature (°C)	ΔT=0	---	24.7
pH (SU)	---	6.5 – 9.0	8.2
Total Inorganic Nitrogen (mg/L)	20	---	14[1]
Nitrate (mg/L)		100	14
Nitrite (mg/L)	---	10	0.03
Total Suspended Solids (mg/L)	---	135	94
Total Dissolved Solids (mg/L)	1,900	3,000	1,612
Fecal Coliform (No./100 ml)	---	200/400	230
Total Ammonia (mg/L)	---	5.72/0.97	<0.1[2]
Total Phosphorus (mg/L)	---	---	0.28
Total Iron (µg/L)	---	1,000	780
Selenium (µg/L)	---	20/5.0	4.7

Notes:

1. Total nitrogen.
2. Dissolved ammonia.
3. NAC 445A.199 or NAC 445A.144.

ΔT: Change in temperature. °C: Degrees Celsius.
SU: Standard units. mg/L: Milligrams per liter.
µg/L: Micrograms per liter. No./100 ml: Number per 100 milliters.

Quantities: Using the maximum permitted flow, 0.2304 MGD, the TP and total ammonia concentrations in the discharge would have to be greater than 0.52 mg/L to exceed the 1.0 lbs/day load limits of the Division's de minimis policy for dischargers that have not received waste load allocations. With a reporting limit of 0.01 mg/L, TP was only detected twice, 0.01 mg/L and 0.03 mg/L, in the 16 reported analyses. With a reporting limit of 0.10 mg/L, ammonia nitrogen as nitrogen was only detected twice, 0.14 mg/L and 0.17 mg/L, in the 17 reported analyses.

Based on reported data, the maximum TP load in the discharge was 0.054 lb/day in the 3rd quarter of 2004.

Based on reported data, the maximum ammonia nitrogen load in the discharge was 0.25 lb/day in the 1st quarter of 2006.

Compliance History: Based on the Division's Compliance Database for the period from the 1st quarter of 2002 through the 4th quarter of 2006, there have been five times the Permittee has not complied with the permit. In the 3rd quarter of 2003, chloroform was detected at a concentration of 5.4 µg/L. In the 1st, 2nd, and 3rd quarters of 2005, the Permittee failed to monitor the flow on a daily basis, therefore, was not able to report a daily maximum flow. The Permittee failed to submit a discharge monitoring report in the 1st quarter of 2007.

Proposed Effluent Limitations: Samples taken in compliance with the monitoring requirements specified below shall be taken from:

a. the totalizing flow meter on the pipeline from the collection sump to the carbon filters; and

b. the sample port located downstream of the carbon filters.

The discharge shall be limited and monitored by the Permittee as specified below:

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	30-Day Average	Daily Maximum	Sample Location	Measurement Frequency	Sample Type
Flow, MGD	0.2304	0.2304	i.	Continuous	Flow Meter
VOC EPA Method 8260 B[1] (report all parameters), µg/L	---	Monitor & Report	ii.	Monthly	Discrete
Tetrachloroethene (PCE)	---	5			
Trihalomethanes, total[2]	---	100			
MTBE	---	20			
Total Inorganic Nitrogen - N, mg/L	---	20.0	ii.	Quarterly	Discrete
Total Ammonia - N, lb/day	---	1.0[3]	ii.	Quarterly	Calculation
Total Phosphorus - P, lb/day	---	1.0[4]	ii.	Quarterly	Calculation
Total Dissolved Solids, mg/L and lb/day	Monitor & Report		ii.	Quarterly	Discrete/ Calculation
Total Suspended Solids, mg/L	Monitor & Report		ii.	Quarterly	Discrete
pH, SU	6.5 ≤ pH ≤ 9.0		ii.	Quarterly	Discrete
Boron, µg/L	Monitor & Report		ii.	Annually[5]	Discrete
Cadmium, total, µg/L	Monitor & Report[6]		ii.	Annually[5]	Discrete
Lead, total, µg/L	Monitor & Report[7]		ii.	Annually[5]	Discrete
Selenium, µg/L	Monitor & Report[8]		ii.	Annually[5]	Discrete
Hardness, mg/L as $CaCO_3$	Monitor & Report		ii.	Annually[5]	Discrete
Iron, total, µg/L	Monitor & Report		ii.	Annually[5]	Discrete

Notes:

1. None of the VOCs shall exceed the NAC 445A.144 standards or the Division remediation standards.
2. Total trihalomethanes = bromodichloromethane + dibromochloromethane + tribromomethane + trichloromethane.
3. Limit applies from April through September. Load (lb/day) = Flow (MGD) x Concentration (mg/L) x 8.34
4. Limit applies from March through October. Load (lb/day) = Flow (MGD) x Concentration (mg/L) x 8.34
5. To be sampled in the fourth quarter and submitted to the Division with the Annual Report.

6. See Part I.B.1.f.
   Cadmium, total: concentration (µg/L) = $e^{\{0.7852\ \ln(H) - 3.490\}}$
   Where: H = Hardness of the discharge.
7. See Part I.B.1.f.
   Lead, total: concentration (µg/L) = $e^{\{1.273\ \ln(H) - 4.705\}}$
   Where: H = Hardness of the discharge.
8. See Part I.B.1.f
   Selenium: 20 µg/L acute standard
   5.0µg/L chronic standard

MGD:	Million gallons per day.	-N:	As nitrogen.
mg/L:	Milligrams per liter.	SU:	Standard units.
µg/L:	Micrograms per liter.	-P:	As phosphorus.
lb/day:	Pounds per day.	VOC:	Volatile organic compounds.
MTBE:	Methyl tert-butyl ether.	$CaCO_3$:	Calcium carbonate

Schedule of Compliance: The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Division, including in said implementation and compliance, any additions or modifications which the Division may make in approving the schedule of compliance.

a. The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.

b. Within thirty (30) days of the permit effective date, the Permittee shall submit a revised Operations and Maintenance Manual to the Division for review and approval.

Rationale for Permit Requirements: Monitoring is required to assess the quality of the discharge water and to ensure that the extracted and treated water will not impact the beneficial uses of the Las Vegas Wash.

Flow: The current permit includes a daily maximum and a 30-day average flow limitation of 0.2304 MGD. In the permit renewal application, the Permittee has requested that the flow limits be retained in the draft permit. In the application, the flows over the last year were reported as 0.19728 MGD, maximum daily value and 0.18000 MGD, average daily value. From the 4th quarter of 2002 through the 4th quarter of 2006, the average discharge flow was 0.17856 MGD with a maximum quarterly discharge rate of 0.21456 MGD in the third quarter of 2004.

Volatile Organic Compounds (VOC): The current permit requires quarterly analysis of VOCs, EPA Method 8260, with drinking water standards as the referenced effluent discharge limitations. The draft permit proposes to increase the monitoring frequency to monthly due to concerns about break through occurring shortly after a sampling and not being detected for three months under quarterly monitoring. The reference to drinking water standards has been clarified to include the NAC 445A.144 standards and the Division remediation standards, toluene 100 µg/L, ethylbenzene 100 µg/L, total xylenes 200 µg/L, etc.

The 2000 permit application identified chloroform, MTBE, and tetrachloroethene (PCE) in the groundwater. From the 4th quarter of 2002 through the 4th quarter of 2006, chloroform, one of the components of total trihalomethanes, has been detected in the discharge 10 times with a maximum concentration of 34 µg/L. During the same time period, 2-butanone, naphthalene, and PCE were detected once in the discharge.

Due to the presence of trihalomethanes, MTBE, and PCE in the discharge or source water, the standards for these VOCs, either NAC 445A.144 or remediation standards, have been incorporated into the draft permit. The State does not have standards for the other detected VOCs. Recent analysis of the source water was not required by the current permit and has not been provided by the Permittee. The draft permit requires the submittal of source water quality data, if this water is analyzed.

Total Inorganic Nitrogen as Nitrogen (TIN): NAC 445A.199 includes a requirement to maintain existing higher quality TIN standard of 95% of the samples ≤ 20.0 mg/L.

From the 4th quarter of 2002 through the 4th quarter 2006, the discharge TIN concentration has ranged from 5.61 mg/L in the 1st quarter of 2005 to 8.15 mg/L in the 2nd quarter of 2004 with an average concentration of 6.95 mg/L. The quarterly TIN monitoring of the current permit has been retained in the proposed permit with the clarification that the 20 mg/L effluent discharge limitation should be applied as a daily maximum.

Total Ammonia as Nitrogen: See General and Quantities sections for total ammonia TMDL information.

Based on the State's de minimis policy of exempting discharges of less than 1.0 lb/day total ammonia from the TMDL analysis, a WLA has not been assigned to this permittee. At the maximum permitted flow of 0.2304 MGD and the maximum quarterly concentration of 0.17 mg/L, the Permittee would discharge 0.33 lb/day of ammonia. The proposed permit has retained the seasonal ammonia load effluent discharge limitation of 1.0 lb/day from the current permit.

Total Phosphorus as Phosphorus (TP): See General and Quantities sections for TP TMDL information.

Based on the State's de minimis policy of exempting discharges of less than 1.0 lb/day TP from the TMDL analysis, a WLA has not been assigned to this permittee. At the maximum permitted flow of 0.2304 MGD and the maximum quarterly TP concentration of 0.03 mg/L, the Permittee would discharge 0.06 lb/day TP.

The proposed permit has retained the seasonal TP load effluent discharge limitation of 1.0 lb/day from the current permit.

Total Dissolved Solids (TDS): NAC 445A.199 includes a TDS RMHQ of 95% of the samples ≤ 1,900 mg/L and a livestock watering beneficial use single value standard of ≤ 3,000 mg/L.

From the 4th quarter of 2002 through the 4th quarter 2006, the discharge TDS concentration has ranged from 2,464 mg/L in the 1st quarter of 2005 to 3,000 mg/L in the 3rd quarter of 2003 with an average concentration of 2,688 mg/L. Based on this data, the TDS concentration in the shallow groundwater exceeds the RMHQ, but not the beneficial use standard. The shallow groundwater with naturally occurring elevated TDS levels would flow to the Wash, if it was not intercepted by the dewatering system, therefore, the TDS standard is not applied to remediation discharges in this area. During the same time period, the TDS load has ranged from 1,038 lb/day in the 2nd quarter of 2004 to 4,687 lb/day in the 3rd quarter of 2004 with an average load of 3,792 lb/day. Quarterly TDS concentration and load monitoring and reporting without effluent discharge limitation has been retained from the current permit.

This permit is for the interception and passage of groundwater and thus is exempted under the Colorado River Basin Salinity Control Forum's policy on groundwater interception.

Total Suspended Solids (TSS): NAC 445A.199 includes a TSS beneficial use standard of 135 mg/L. This standard does not apply when flows are greater than 110% of average flow as measured at the nearest gage. "Average flow" is defined as the 12-month rolling average of the average monthly flow.

At a reporting level of 10 mg/L, TSS was detected in 5 of 17 analyses with a maximum concentration of 26 mg/L in the 2nd quarter of 2004. Quarterly monitoring without effluent discharge limitation has been retained in the draft permit, due primarily to the stormwater component of the system influent.

pH: NAC 445A.199 includes a single value pH water quality standard for beneficial uses within the range of 6.5 – 9.0 SU.

From the 4th quarter of 2002 through the 4th quarter 2006, the discharge pH has ranged from 6.49 SU in the 3rd quarter of 2004 to 7.72 SU in the 4th quarter of 2002. The draft permit proposes to retain quarterly monitoring with the 6.5 SU to 9.0 SU range as the pH effluent discharge limitation.

Boron: NAC 445A.144 includes a boron water quality standard for beneficial uses, irrigation, of 750 µg/L.

With a reporting limit of 500 µg/L, the average boron concentration in the discharge has been 690 µg/L with a maximum of 840 µg/L in the 4th quarter of 2006 and a non-detect in the 4th quarter of 2003. Due to naturally occurring concentrations approaching the irrigation standard, the annual boron monitoring and reporting without effluent discharge limitation is proposed to be retained from the current permit.

Cadmium, total: The NAC 445A.144 Aquatic Life Standards include equations with hardness as the only variable to determine the 1-hour, acute, and 96-hour, chronic, average dissolved cadmium standards.

Dissolved cadmium has not been detected in the annual discharge analyses at a reporting limit of 0.01 mg/L. The Clean Water Act requires metals to be analyzed for total metals, not the dissolved fraction. Also, the cadmium reporting limit would not have been low enough to determine compliance with the chronic aquatic life standard. The draft permit proposes to replace the annual monitoring and reporting without effluent discharge limitations of dissolved cadmium with total cadmium and specifies aquatic life reporting limits.

Lead, total: The NAC 445A.144 Aquatic Life Standards include equations with hardness as the only variable to determine the 1-hour, acute, and 96-hour, chronic, average dissolved lead standards.

Dissolved lead has not been detected in the annual discharge analyses at a reporting limit of 0.05 mg/L. The Clean Water Act requires metals to be analyzed for total metals, not the dissolved fraction. Also, the lead reporting limit would not have been low enough to determine compliance with the chronic aquatic life standard. The draft permit proposes to replace the annual monitoring and reporting without effluent discharge limitations of dissolved lead with total lead and specifies aquatic life reporting limits.

Selenium: The NAC 445A.144 Aquatic Life Standards include a 1-hour average standard, acute, of 20 µg/L and a 96-hour average standard, chronic, of 5.0 µg/L.

At reporting levels of 0.050 mg/L and 0.070 mg/L, selenium has not been detected in the discharge. The selenium reporting limits were not low enough to determine compliance with the aquatic life standards. Due to naturally occurring concentrations potentially approaching or exceeding the aquatic life standards and the 303(d) listing of the Wash, the annual selenium monitoring and reporting without effluent discharge limitation is proposed to be retained from the current permit. The proposed permit specifies aquatic life reporting limits.

Hardness as $CaCO_3$: Annual monitoring and reporting of hardness as calcium carbonate has been added to the draft permit because the aquatic life standards, NAC 445A.144, for lead and cadmium are functions of the hardness. Monitoring of total lead and total cadmium is required by the draft permit.

Total Iron: Annual monitoring of total iron without concentration or load limits has been added to the draft permit due to the 303(d) listing of the this parameter as a pollutant or stressor of concern in the Wash. Monitoring of this parameter is not required by the current permit. In the 4th quarter of 2006, the only available data, the iron concentration in the discharge was 120 µg/L.

Proposed Determination: The Division has made the tentative determination to issue the proposed permit for a five (5) year period.

Procedures for Public Comment: The Notice of the Division's intent to issue a permit authorizing the Permittee to continue to discharge treated water to the Las Vegas Wash subject to the conditions contained within the permit, is being sent to the **Las Vegas Review Journal** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing until 5:00 PM September 22, 2007, a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator of EPA Region IX or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted. Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determined to be appropriate. All public hearings must be conducted to accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.238.

Prepared by: Bruce Holmgren
August 2007
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